

## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SMR/P550588PC	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA416
International application No. PCT/GB2004/001316	International filing date (day/month/year) 26.03.2004	Priority date (day/month/year) 04.04.2003	
International Patent Classification (IPC) or national classification and IPC A47L23/26			
Applicant MILLIKEN INDUSTRIALS LIMITED et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 3 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  15.10.2004		Date of completion of this report  23.11.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Reichhardt, O  Telephone No. +49 89 2399-2485	



# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/GB2004/001316

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3 and 23.1(b))
    - ☐ publication of the international application (under Rule 12.4)
    - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

### Description, Pages

1-9 as originally filed

### Claims, Numbers

1-31 received on 18.10.2004 with letter of 15.10.2004

### Drawings, Sheets

1/2, 2/2 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
    - ☐ the description, pages
    - ☐ the claims, Nos.
    - ☐ the drawings, sheets/figs
    - ☐ the sequence listing (*specify*):
    - ☐ any table(s) related to sequence listing (*specify*):
  4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
    - ☐ the description, pages
    - ☐ the claims, Nos.
    - ☐ the drawings, sheets/figs
    - ☐ the sequence listing (*specify*):
    - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

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**Box No. IV Lack of unity of invention**

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1. ☐ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
  - ☐ paid additional fees.
  - ☐ paid additional fees under protest.
  - ☐ neither restricted nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
  - ☐ the parts relating to claims Nos. .

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-31
	No: Claims	
Inventive step (IS)	Yes: Claims	1-31
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-31
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/GB2004/001316

1. The application relates to two inventions being not so linked as to form a single inventive concept, contrary to the requirement of Rule 13 PCT (unity):
- \* first invention: Claims 1 - 23;
  - \* second invention: Claims 24 - 31.
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**2. Concerning claims 1 - 23:**

**2.1 Closest prior art: DE-U-296 03 229.**

This document discloses a dust control mat having a textile layer and a backing layer, wherein the textile layer includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, said first fabric layer comprising a mesh having a number of openings, a second fabric layer that forms the lower surface of the textile layer, and an intermediate pile layer that interconnects and spaces the first and second fabric layers.

In order to prevent material from entering the spacer fabric when bonding the textile layer to the backing layer, the invention suggests that the backing layer is made of rubber and the second fabric layer has a substantially closed structure and is bonded to the rubber backing layer.

None of the available documents renders obvious such dust control mat. Consequently, the subject-matter of independent claim 1 meets the requirements of Article 33(2),(3) PCT with regard to novelty and inventive step.

**2.2 Dependent claims 2 - 18 concern further embodiments of the dust control mat according to claim 1.**  
Consequently, the subject-matter of claims 2 - 18 meets the requirements of Article 33(2),(3) PCT.

**2.3 Independent claim 19 defines a method of manufacturing a dust control mat according to claim 1.**

Consequently, the subject-matter of independent claim 19 meets the requirements of Article 33(2),(3) PCT.

- 2.4 Dependent claims 20 - 23 concern further embodiments of the method according to claim 19.  
Consequently, the subject-matter of claims 20 - 23 meets the requirements of Article 33(2),(3) PCT.

- 2.5 The dust control mat and the method as defined in claims 1 - 23 are industrial applicable.  
Consequently, the subject-matter of claims 1 - 23 meets the requirement of Article 33(4) PCT.
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### **3. Concerning claims 24 - 31:**

- 3.1 Closest prior art: DE-U-296 03 229.

This document discloses a dust control mat having a textile layer that includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, a second fabric layer that forms the lower surface of the textile layer, and an intermediate pile layer that interconnects and spaces the first and second fabric layers.

In order to produce a poster mat, the invention suggests that the first fabric layer carries a printed image having an observable resolution of at least 75 dpi.

None of the available documents renders obvious such dust control mat.  
Consequently, the subject-matter of independent claim 24 meets the requirements of Article 33(2),(3) PCT with regard to novelty and inventive step.

- 3.2 Dependent claims 25 - 27 concern further embodiments of the dust control mat according to claim 24.

Consequently, the subject-matter of claims 25 - 27 meets the requirements of Article 33(2),(3) PCT.

3.3 Independent claim 28 defines a method of manufacturing a dust control mat according to claim 24.  
Consequently, the subject-matter of independent claim 28 meets the requirements of Article 33(2),(3) PCT.

3.4 Dependent claims 29 - 31 concern further embodiments of the method according to claim 28.  
Consequently, the subject-matter of claims 29 - 31 meets the requirements of Article 33(2),(3) PCT.

3.5 The dust control mat and the method as defined in claims 24 - 31 are industrial applicable.  
Consequently, the subject-matter of claims 24 - 31 meets the requirement of Article 33(4) PCT.

## CLAIMS

1. A dust control mat having a textile layer and a backing layer, wherein the textile layer includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, said first fabric layer comprising a mesh having a number of openings, a second fabric layer that forms the lower surface of the textile layer, and an intermediate pile layer that interconnects and spaces the first and second fabric layers, wherein the backing layer is made of rubber and the second fabric layer has a substantially closed structure and is bonded to the rubber backing layer.
2. A dust control mat according to claim 1, in which the openings have a width of 0.5-10mm, preferably 1-4mm, more preferably 2-3mm.
3. A dust control mat according to any one of the preceding claims, in which the first fabric layer is a knitted fabric of approximately gauge 11.
4. A dust control mat according to any one of the preceding claims, in which the first fabric layer is made of a multifilament yarn, preferably polyester yarn.
5. A dust control mat according to claim 4, in which the first fabric layer is made of a yarn having a decitex of 100-200, preferably 136-167, more preferably approximately 150.
6. A dust control mat according to any one of the preceding claims, in which the second fabric layer is a knitted fabric of approximately gauge 22 or higher.
7. A dust control mat according to any one of the preceding claims, in which the second fabric layer is made of a multifilament yarn, preferably polyester yarn.
8. A dust control mat according to claim 7, in which the second fabric layer is made of a yarn having a decitex of 100-200, preferably 136-167, more preferably approximately 150.
9. A dust control mat according to any one of the preceding claims, in which the intermediate pile layer has a thickness of 2-10mm, preferably approximately 4-6mm.

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10. A dust control mat according to any one of the preceding claims, in which the intermediate pile layer is made from a monofilament yarn having a diameter in the range 0.04-3mm, preferably 0.05-0.3mm, more preferably 0.1-0.2mm.
11. A dust control mat according to any one of the preceding claims, in which the intermediate pile layer is made from a synthetic monofilament yarn, preferably polyester yarn.
12. A dust control mat according to any one of the preceding claims, in which the textile layer is a warp knit fabric, preferably a Raschel knit fabric.
13. A dust control mat according to any one of the preceding claims, wherein the backing layer is made of nitrile rubber.
14. A dust control mat according to any one of the preceding claims, wherein the thickness of the rubber backing layer is from 0.5mm to 5mm, preferably 0.8mm to 3mm.
15. A dust control mat according to any one of the preceding claims, in which the rubber backing layer is vulcanised to the second fabric layer.
16. A dust control mat according to any one of the preceding claims, wherein the textile layer is printed.
17. A dust control mat according to claim 16, in which the textile layer is printed with an image having an observable resolution of at least 75dpi.
18. A dust control mat according to any one of the preceding claims, wherein the textile layer has an area of at least 0.2m<sup>2</sup>, preferably at least 1m<sup>2</sup>.
19. A method of manufacturing a dust control mat, the method including the steps of bonding a backing layer to a textile layer that includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, a second fabric layer and an intermediate pile layer that interconnects and spaces the first and second fabric layers, said first fabric layer comprising a mesh having a number of openings, wherein the backing layer is made of rubber and is bonded to the second fabric layer, and said second fabric layer has a substantially closed structure.
20. A method according to claim 19, in which the spacer fabric is a knitted fabric, preferably a warp knitted fabric, more preferably a Rachel knit fabric.



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21. A method according to claim 19 or claim 20, wherein the rubber backing layer is vulcanised to the textile layer in a heated press.
22. A method according to any one of claims 19 to 21, wherein the textile layer is printed using a sublimatic printing process.
23. A method according to claim 22 when dependent on claim 21, wherein the textile layer is printed during the backing process.
24. A dust control mat having a textile layer that includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, a second fabric layer that forms the lower surface of the textile layer and an intermediate pile layer that interconnects and spaces the first and second fabric layers, wherein the first fabric layer carries a printed image having an observable resolution of at least 75dpi.
25. A dust control mat according to claim 24, in which the first fabric layer comprises a mesh having a number of openings.
26. A dust control mat according to claim 25, in which the openings have a width of 0.5-10mm, preferably 1-4mm, more preferably 2-3mm.
27. A dust control mat according to any one of claims 24 to 26, including a backing layer that is bonded to the second fabric layer.
28. A method of manufacturing a dust control mat, the method including the steps of bonding a backing layer to a textile layer that includes a spacer fabric having a first fabric layer that forms the upper surface of the mat, a second fabric layer and an intermediate pile layer that interconnects and spaces the first and second fabric layers, wherein the first fabric layer is printed with an image having an observable resolution of at least 75dpi.
29. A method according to claim 28, wherein the textile layer is printed using a sublimatic printing process.
30. A method according to claim 28 or claim 29, wherein the backing layer is made of rubber and is bonded to the second fabric layer in a heated press, and the textile layer is printed during the backing process.
31. A method according to any one of claims 28 to 30, in which the first fabric layer comprises a mesh having a number of openings.